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#51 Formal Drawings  
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IN RE PATENT APPLICATION OF:

**UNG ET AL.**

TITLE: **WIRELESS CHAT AUTOMOBILE STATUS SIGNALING**

July 10, 2001

**SUBMISSION OF FORMAL DRAWINGS**

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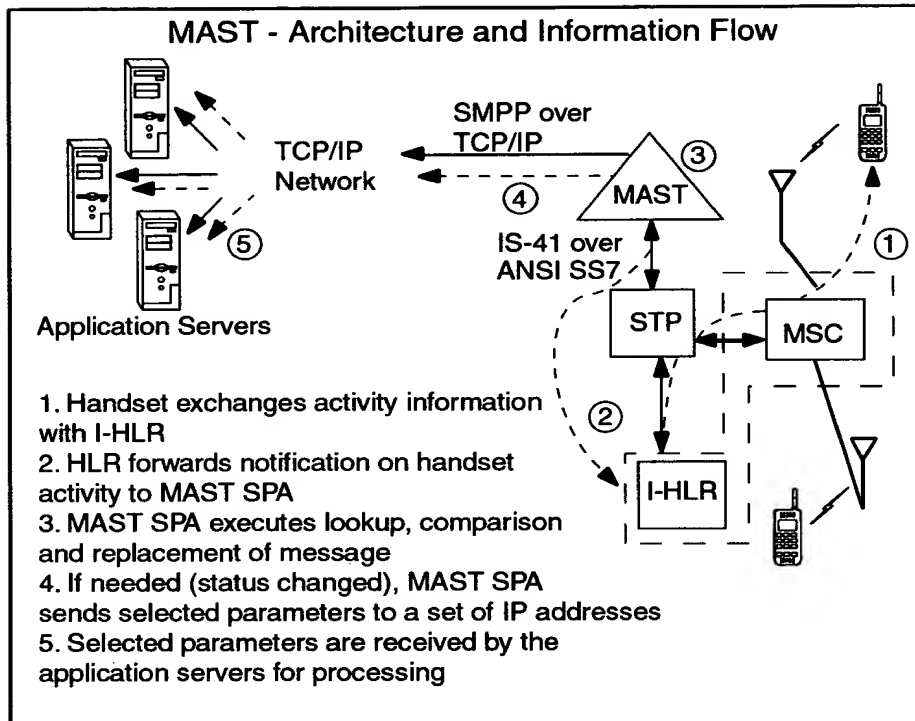
Sir:

Please accept the herewith 17 sheets of formal drawings on A4 size paper of Figures 1 through 13, which are in lieu of the informal drawings filed earlier.

Respectfully submitted,

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*MAST Architecture and Information Flow*

**FIG. 1**

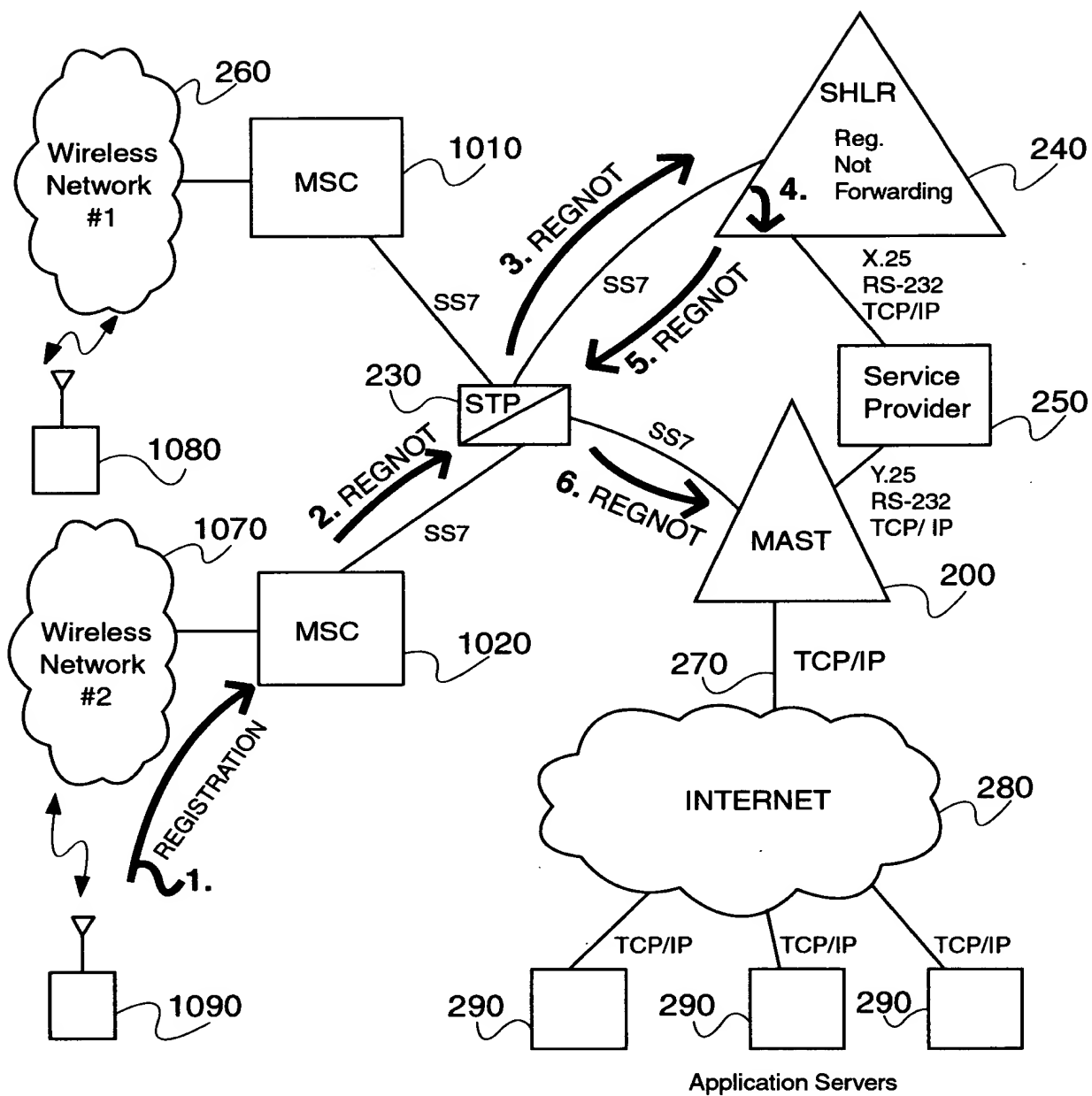


FIG. 2

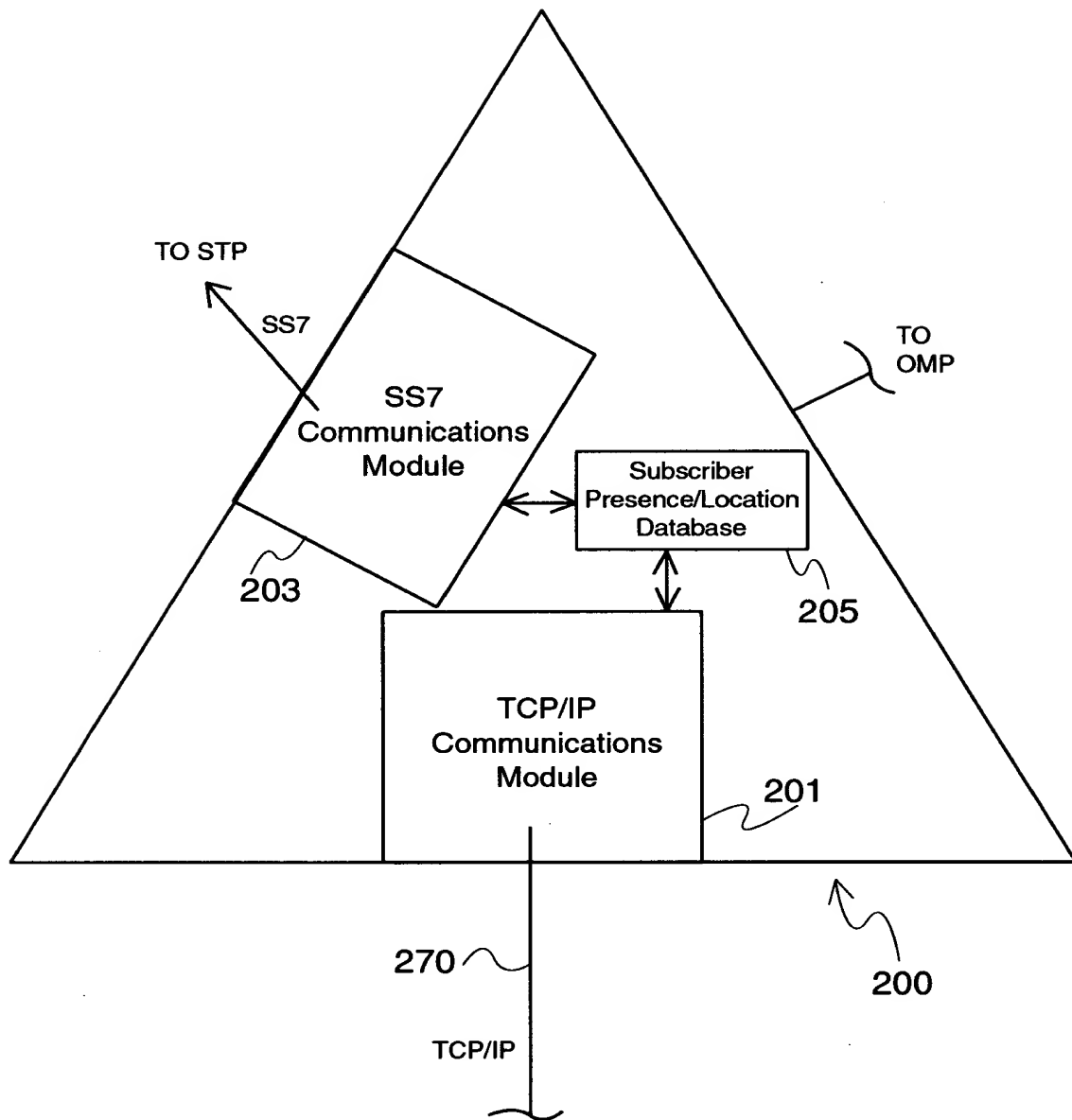


FIG. 2A

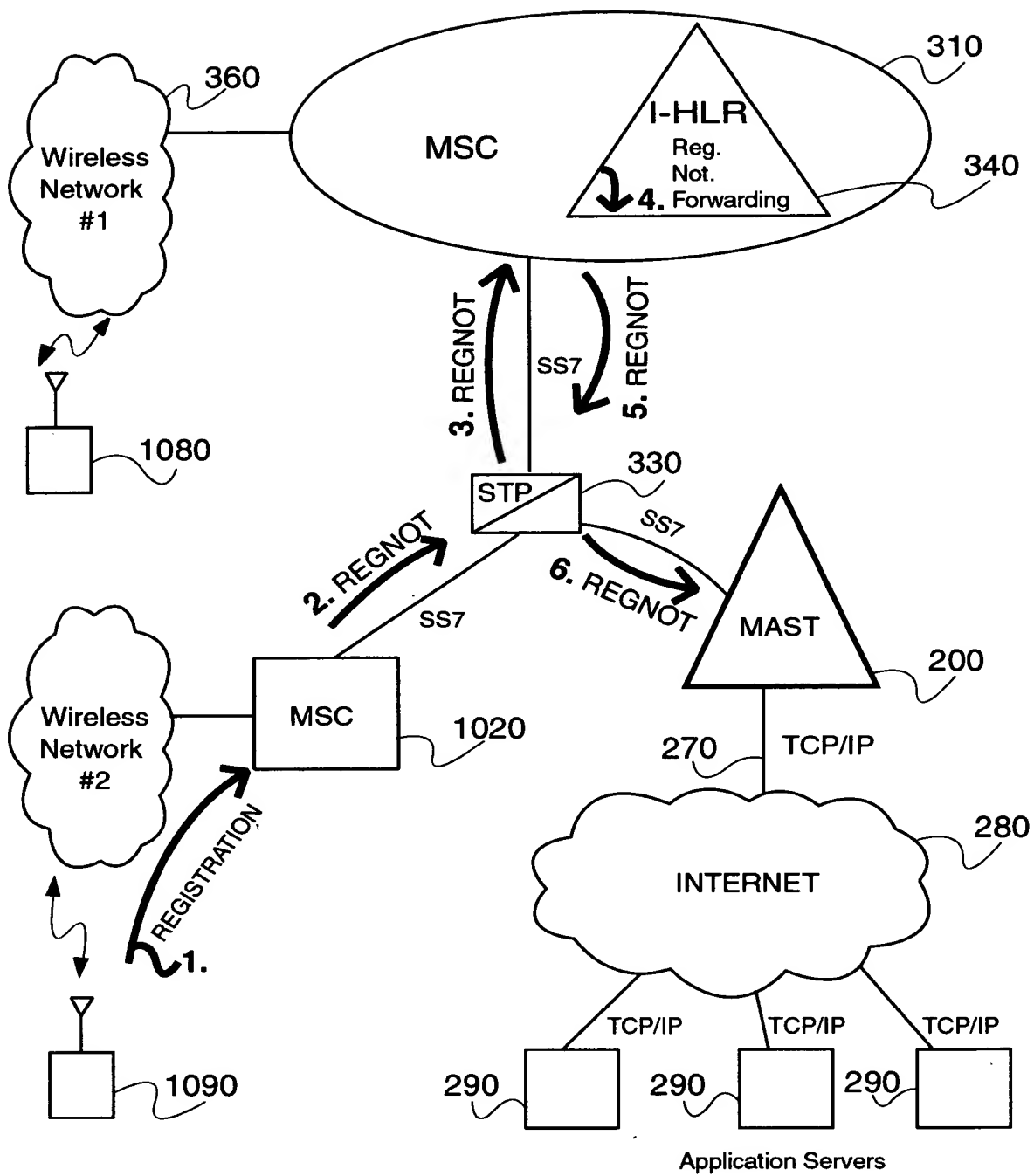


FIG. 3

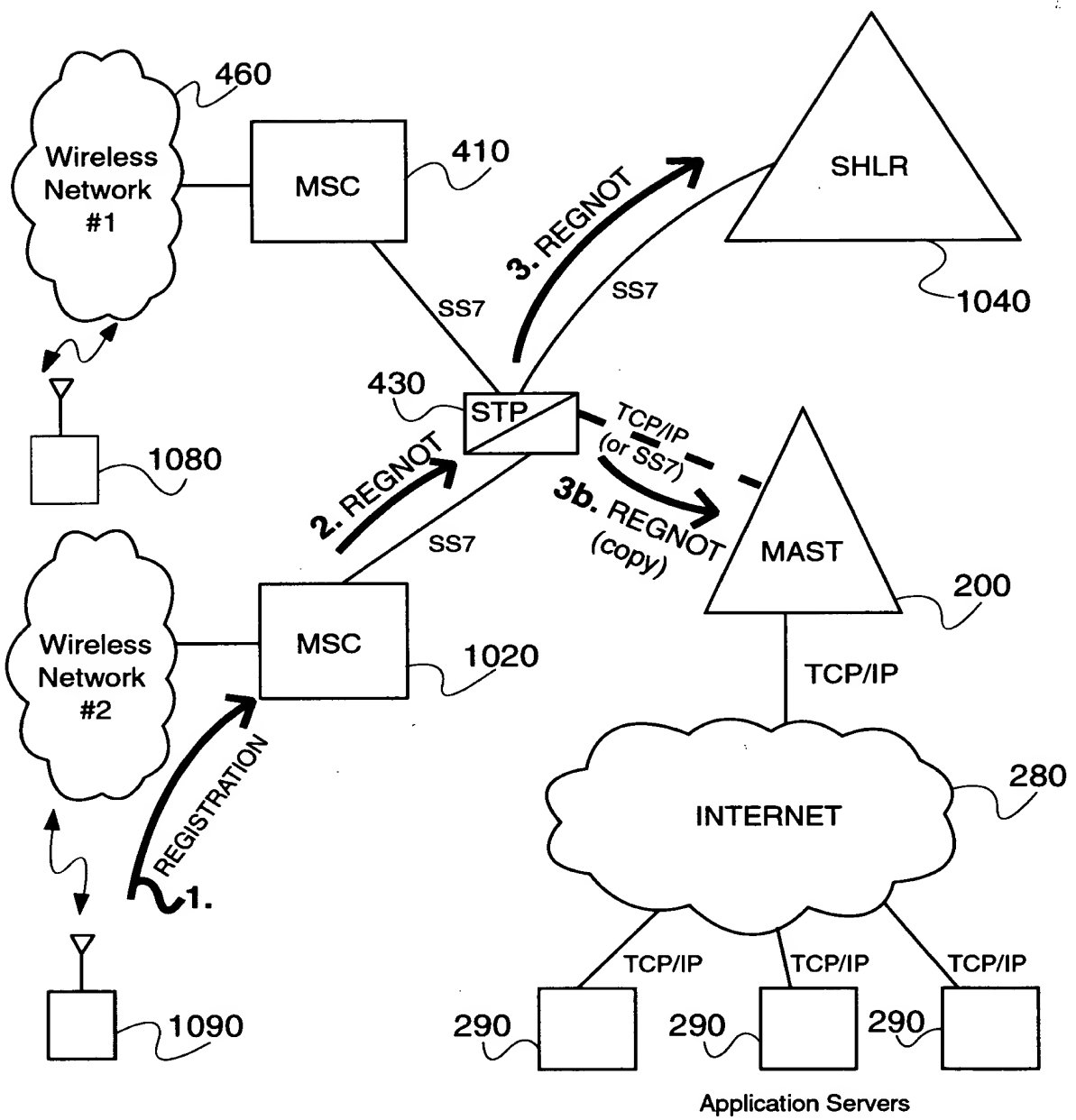


FIG. 4

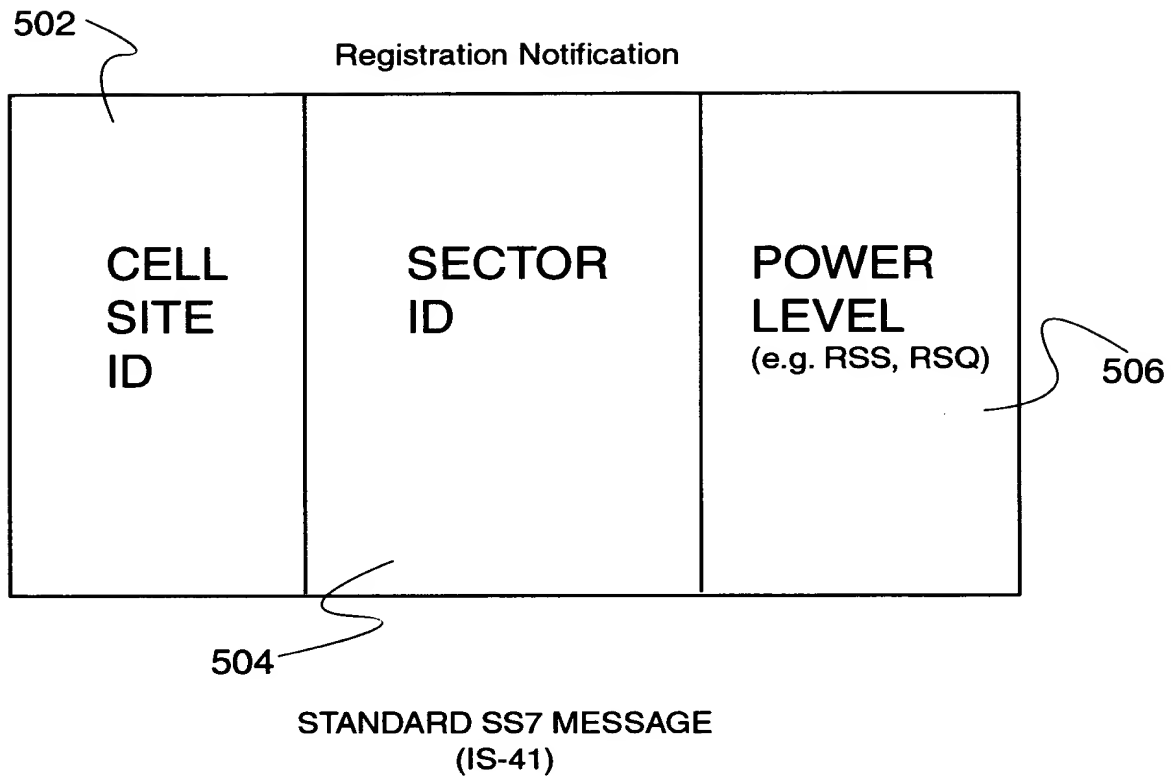


FIG. 5A

RegistrationNotification INVOKE Parameters	
Field	Value
Identifier	SET [NATIONAL18]
Length	variable octets
Contents	
ElectronicSerialNumber	
MobileIdentificationNumber	
MSCID (Serving MSC)	
QualificationInformationCode	
SystemMyTypeCode (Serving MSC or VLR)	
AvailabilityType	
BorderCellAccess	
ControlChannelData	
ExtendedMSCID (VLR)	
LocationAreaID	
PC_SSN (Serving MSC or VLR)	
ReceivedSignalQuality	
ReportType	
SenderIdentificationNumber	
SMS_ Address	
SMS_ MessageWaitingIndicator	
SystemAccessData	
SystemAccessType	
SystemCapabilities	
TerminalType	
TransactionCapability	

RegistrationNotification INVOKE Parameters

FIG. 5B (Prior Art)



Mobile Subscriber Inactive

Shut Down  
Alert

STANDARD SS7 MESSAGE  
(IS-41)

FIG. 6

## MSInactive

This operation was named CSSInactive prior to this revision of the Interim Standard.

The MSInactive operation is used to indicate that an MS is inactive. The MSInactive operation is also used by the Serving VLR to notify the HLR of the cancellation of an MS's registration. The MSInactive operation is used by the HLR to provide the MS's CallHistoryCount to the AC when the SSD is shared with the VLR, and the VLR cancels the MS's registration.

The MSInactive operation is initiated with a TCAP INVOKE (LAST). This is carried by a TCAP QUERY WITH PERMISSION package. The Parameter Set is encoded as follows:

**Table 66 MSInactive INVOKE Parameters**

MSInactive INVOKE Parameters				Timer: MSIT
Field	Value	Type	Reference	Notes
Identifier	SET [NATIONAL 18]	M	6.3.2.1	
Length	variable octets	M	6.3.2.1	
Contents				
ElectronicSerialNumber		M	6.5.2.63	
MobileIdentificationNumber		M	6.5.2.81	
CallHistoryCount		O	6.5.2.18	a
DeregistrationType		O	6.5.2.55	b
LocationAreaID		O	6.5.2.77	c
SenderIdentificationNumber		O	6.5.2.116	d
SMS_MessageWaitingIndicator		O	6.5.2.129	e

### Notes:

- Include if MS registration is canceled and if the SSD is shared.
- Include from VLR to HLR and HLR to AC for MS deregistration.
- May be included from MSC-V to VLR. Usage in the HLR is not defined.
- Include to identify the functional entity sending this message.
- Include to indicate that an SMS message is pending delivery.

**FIG. 6B**

IP Address	Mobile ID	Presence Time/ Date	Location
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IP MESSAGE TO APPLICATION SERVER  
( e.g., to Chat Server)

FIG. 7A

IP Address	Mobile ID	Log	Presence Time/Date	Location
		#1		
		#2		
		#3		
		#4		
		#5		
		#6		

IP MESSAGE TO APPLICATION SERVER

FIG. 7B

SAMPLE OF TABLE

MSID	ACTIVE Y/N	LAST DATE/TIME	PARAMETER 1	PARAMETER 2	PARAMETER 3
COMPARE FIELD	Y	N	Y	N	Y
SEND FIELD	Y	Y	Y	Y	Y
9083067462	Y	120314520000	XX	YY	ZZ

FIG. 8

SAMPLE DECISION TREE

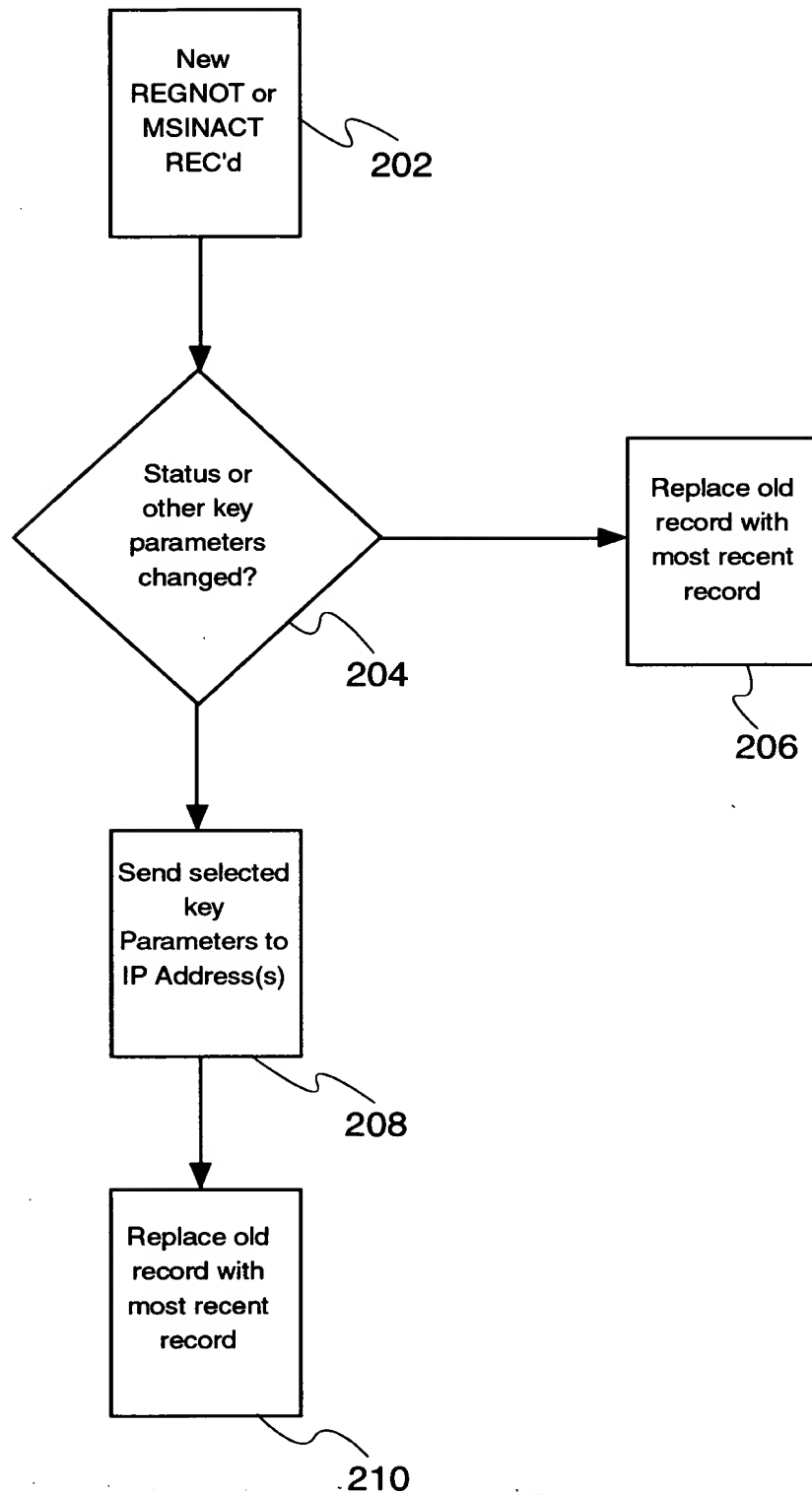


FIG. 9

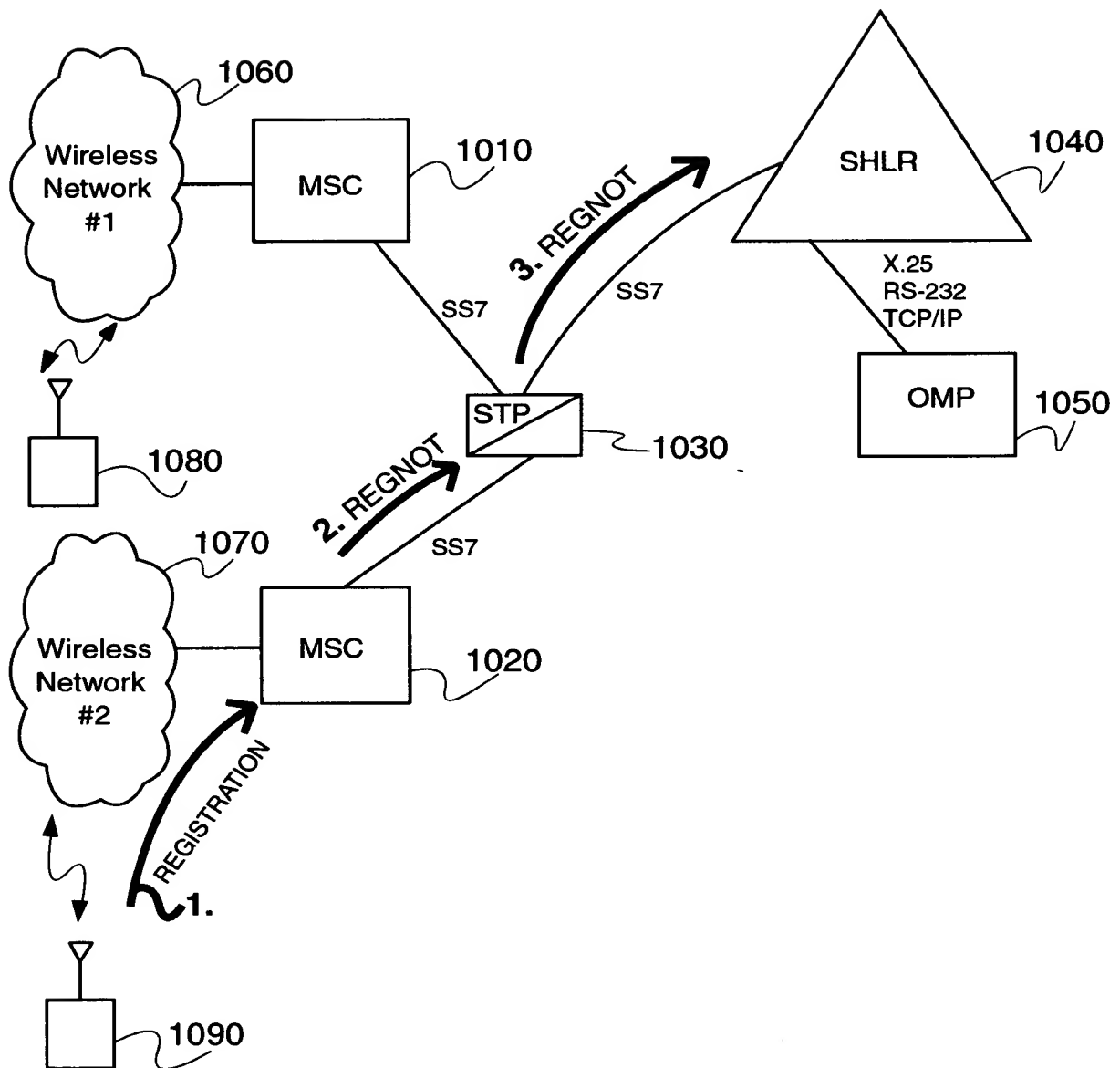


FIG. 10

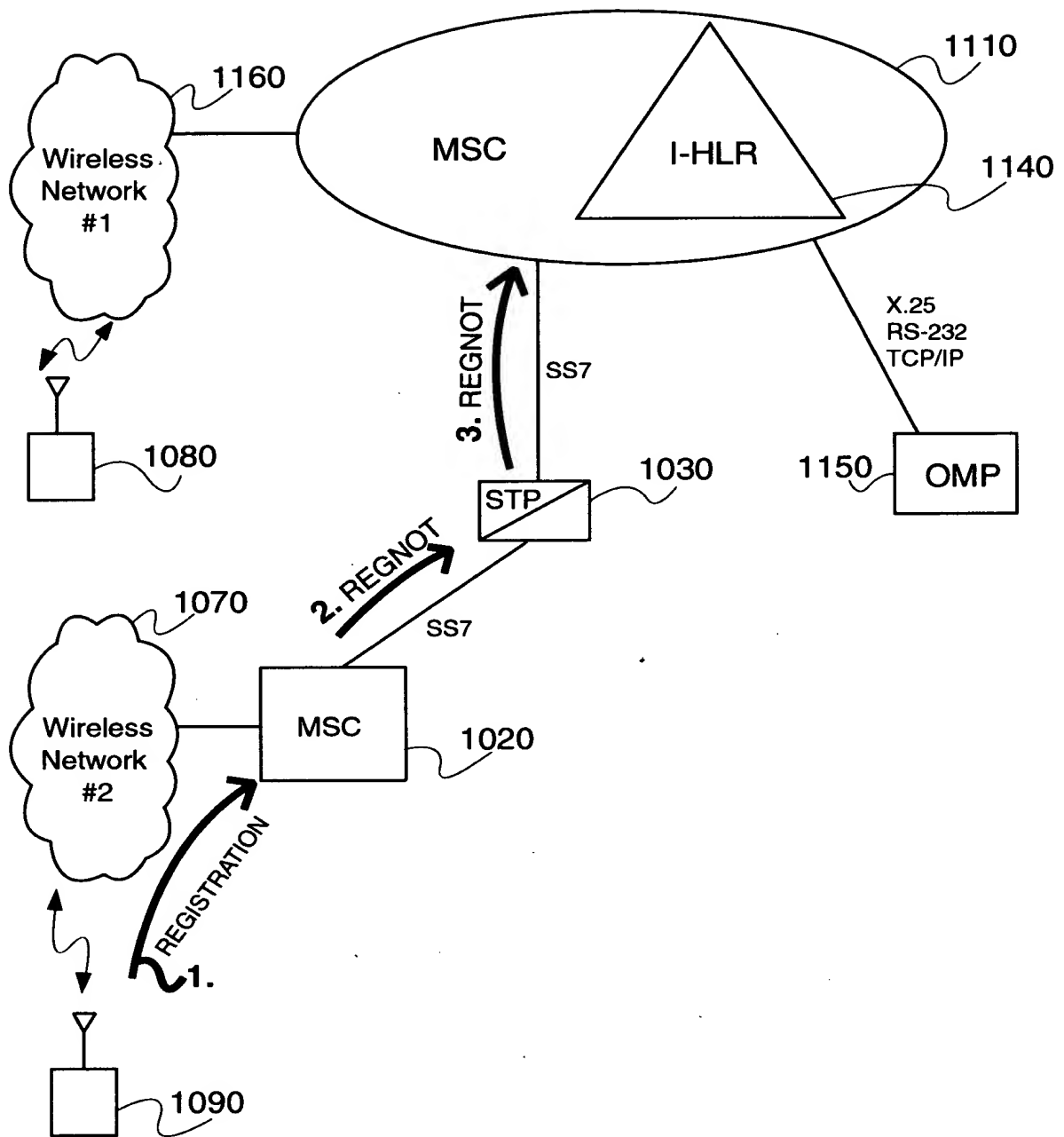


FIG. 11



Automatic On-line or Off-Line Notification Chat Scenario

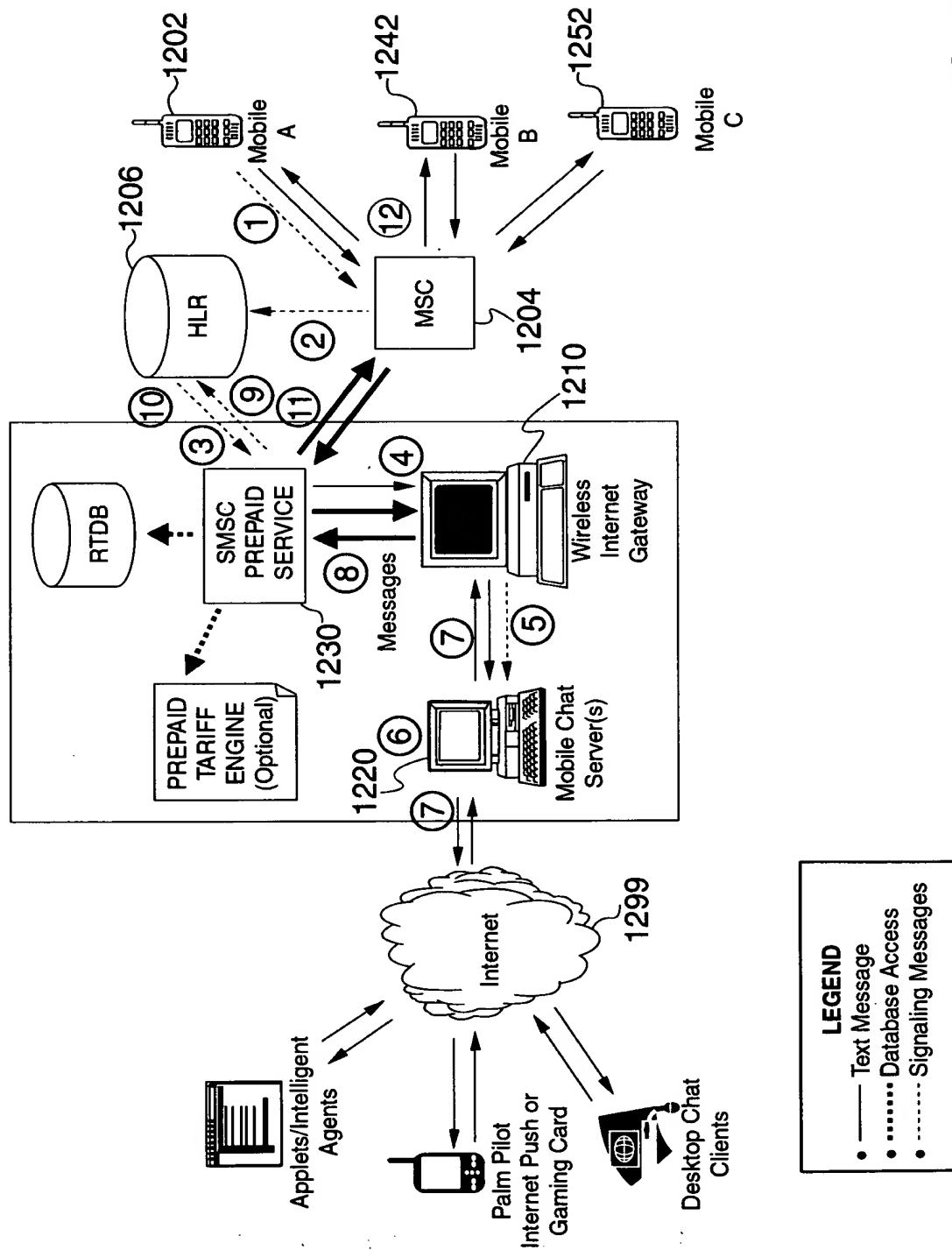


FIG.12

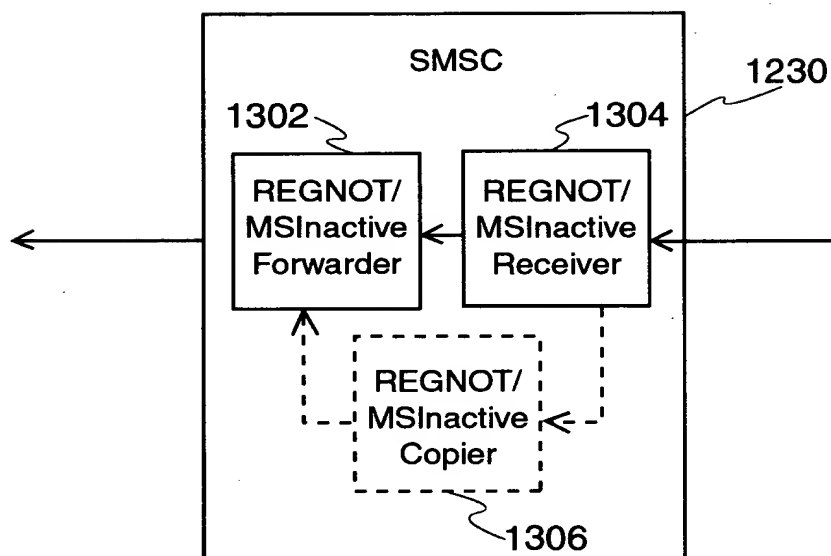


FIG. 13